

10.4 M&Ms Probability Activity

Suppose you have a bag of mixed M&Ms with the numbers of each color and type as indicated in the table below.

	Red	Orange	Yellow	Green	Brown	<i>Total</i>
Chocolate	75	84	55	62	91	367
Peanut	80	52	24	57	35	248
Mint	40	13	49	28	17	147
<i>Total</i>	195	149	128	147	143	762

- 1) Suppose you draw one M&M.
 - a) Find the probability that it is yellow.
 - b) Find the probability that it is not peanut.
 - c) Find the probability that it is green or brown.
 - d) Find the probability that it is neither red nor orange.
 - e) Find the probability that it is red, given that it is chocolate.
 - f) Find the probability that it is chocolate, given that it is red.
 - g) Given that you draw a green M&M, find the probability that it is mint.
 - h) Given that you draw a peanut M&M, find the probability that it is orange or yellow.

2) Now suppose you draw 3 M&Ms.

- a) Find the probability that they are all orange. Assume that you keep (eat) the M&Ms once they are drawn.

- b) Find the probability that they are all orange. Assume that you return the M&Ms back to the bag after each draw.

- c) Find the probability that you get a chocolate, peanut, and then mint (in that order). Assume that you return the M&Ms back to the bag after each draw.

- d) Find the probability that none of them are brown. Assume that you keep the M&Ms once they are drawn.

- e) Find the probability that there is at least one chocolate. Assume that you keep the M&M's once they are drawn.
HINT: Can you use a complement to find this? What is the opposite of 'at least one'?